

Chemical Analysis Report

CEN-DIST-2016-09-15-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

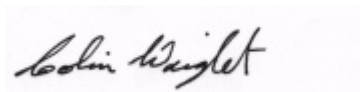
Event Description: **Strickland D /Turnbull Bay B**
Request ID: **RQ-2016-09-12-61**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Environmental Administrator

Date Certified: 07-OCT-2016 14:20

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

**Sample Location: TURNBULL BAY @ 2 MILES NW OF
 TURNBULL BAY RD.**

Collection Date/Time: 09/14/2016 10:47

Field ID: G5CE0075

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1831766	EPA 180.1 Rev. 2.0	Turbidity	8.7		NTU	P311235	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P311452	
	SM 2540 D-97	TSS	18		mg/L	P311880	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P311627	
1831767	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P311429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P311472	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P311938	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P311850	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P311729	
1831768	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P311242	

**Sample Location: STRICKLAND BAY @ 875M EAST
 (DOWNSTREAM) OF RR CROSSING**

Collection Date/Time: 09/14/2016 11:00

Field ID: G5CE0074

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1831763	EPA 180.1 Rev. 2.0	Turbidity	6.8	A	NTU	P311235	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P311452	
	SM 2540 D-97	TSS	13	A	mg/L	P311880	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P311627	
1831764	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P311429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P311472	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P311937	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P311850	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P311729	
1831765	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P311242	
1831774	EPA 200.7 Rev. 4.4	Iron	320	I	ug/L	P311608	
	EPA 200.8 Rev. 5.4	Arsenic	2.50		ug/L	P311608	
		Cadmium	0.060	U	ug/L	P311608	
		Chromium	0.62		ug/L	P311608	
		Copper	0.46	I	ug/L	P311608	
		Lead	0.47	I	ug/L	P311608	
		Nickel	0.38	I	ug/L	P311608	
		Silver	0.015	U	ug/L	P311608	
		Zinc	3.0	U	ug/L	P311608	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P311235

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P311608

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P311608

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311429

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P311472

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311937

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311938

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311850

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311242

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P311452

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P311880

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P311627

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P311729

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P311608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P311608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.2		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	96.5		P	85 - 115
Copper	94.1		P	85 - 115
Lead	94.7		P	85 - 115
Nickel	97.1		P	85 - 115
Silver	95.5		P	85 - 115
Zinc	98.2		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P311472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	103		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P311452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P311627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P311729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P311608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
---------------	-----------	---------	---------	-----------	----------------

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P311608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1832329	Iron	89.1	91.4	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P311608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1832329	Arsenic	104	103	P/P	70 - 130
1832329	Cadmium	93.2	92.9	P/P	70 - 130
1832329	Chromium	78.7	77.9	P/P	70 - 130
1832329	Copper	94.3	95.3	P/P	70 - 130
1832329	Lead	104	103	P/P	70 - 130
1832329	Nickel	98.9	98.8	P/P	70 - 130
1832329	Silver	88.4	88.6	P/P	70 - 130
1832329	Zinc	88.9	89.9	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831764	Ammonia-N	99.7	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P311472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831233	Kjeldahl Nitrogen	88.3	99.6	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831764	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831767	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831231	Total-P	98.9	93.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831678	O-Phosphate-P	98.1	99.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P311627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831182	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P311729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1831186	Organic Carbon	93.1	92.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P311235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831763	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P311608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1832329	Iron	2.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P311608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1832329	Arsenic	1.06	Spike	P	0 - 20
1832329	Cadmium	0.413	Spike	P	0 - 20
1832329	Chromium	1.09	Spike	P	0 - 20
1832329	Copper	1.04	Spike	P	0 - 20
1832329	Lead	0.741	Spike	P	0 - 20
1832329	Nickel	0.0384	Spike	P	0 - 20
1832329	Silver	0.141	Spike	P	0 - 20
1832329	Zinc	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831764	Ammonia-N	0.944	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P311472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P311472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831233	Kjeldahl Nitrogen	10.1	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831764	NO2NO3-N	0.462	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831767	NO2NO3-N	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831231	Total-P	5.70	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831678	O-Phosphate-P	1.61	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P311452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831182	Total Alkalinity	0.284	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P311880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831763	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P311627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831182	Fluoride	0.0	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P311729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1831186	Organic Carbon	1.01	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A71650
Included Lab Sample IDs: 1831763, 1831766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A71652
Included Lab Sample IDs: 1831765, 1831768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A71708
Included Lab Sample IDs: 1831764, 1831767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	96.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A71720
Included Lab Sample IDs: 1831763, 1831766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A71762
Included Lab Sample IDs: 1831764, 1831767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	93.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A71764
Included Lab Sample IDs: 1831763, 1831766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A71797

Included Lab Sample IDs: 1831764, 1831767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	97.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A71810

Included Lab Sample IDs: 1831774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	104	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71833

Included Lab Sample IDs: 1831764, 1831767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A71844

Included Lab Sample IDs: 1831774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.7	101	P/P	90 - 110
Cadmium	98.8	96.8	P/P	90 - 110
Chromium	97.8	94.4	P/P	90 - 110
Lead	94.2	92.6	P/P	90 - 110
Silver	96.3	94.8	P/P	90 - 110
Zinc	99.6	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71852

Included Lab Sample IDs: 1831764, 1831767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A71911

Included Lab Sample IDs: 1831774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.8	92.3	P/P	90 - 110
Nickel	95.4	93.7	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.92	
EPA 200.7 Rev. 4.4	Iron	104	89.1	91.4			2.58
EPA 200.8 Rev. 5.4	Arsenic	99.2	104	103			1.06
	Cadmium	100	93.2	92.9			0.413
	Chromium	96.5	78.7	77.9			1.09
	Copper	94.1	94.3	95.3			1.04
	Lead	94.7	104	103			0.741
	Nickel	97.1	98.9	98.8			0.0384
	Silver	95.5	88.4	88.6			0.141
	Zinc	98.2	88.9	89.9			1.05
EPA 350.1 Rev. 2.0	Ammonia-N	96.5	99.7	98.0			0.944
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.5	88.3	99.6			10.1
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105	105			0.462
	NO2NO3-N	104	103	102			1.41
EPA 365.1 Rev. 2.0	Total-P	96.9	98.9	93.3			5.70
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.1	99.8			1.61
SM 2320 B-97	Total Alkalinity	104				0.284	
SM 2540 D-97	TSS					0.0	
SM 4500 F-C-97	Fluoride	98.4	97.0	97.0			0.0
SM 5310 B-00	Organic Carbon	97.1	93.1	92.0			1.01

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1831763, 1831766
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1831774
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1831774
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1831764, 1831767
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1831764, 1831767
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1831764, 1831767
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1831764, 1831767
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1831765, 1831768
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1831763, 1831766
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1831763, 1831766
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1831763, 1831766
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1831764, 1831767

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	09/15/2016			09/15/2016 15:35	Sima Feizi	1831763, 1831766
EPA 200.7 Rev. 4.4	09/15/2016	09/21/2016	Elliott D. Healy	09/23/2016	Joshua Ayres	1831774
EPA 200.8 Rev. 5.4	09/15/2016	09/21/2016	Elliott D. Healy	09/26/2016	Charles J. Peterson	1831774
	09/15/2016	09/21/2016	Elliott D. Healy	09/29/2016	Charles J. Peterson	1831774
EPA 350.1 Rev. 2.0	09/15/2016			09/16/2016	Sofia Elnemr	1831764, 1831767
EPA 351.2 Rev. 2.0	09/15/2016	09/20/2016	Adrian Shelby	09/21/2016	Christopher Armour	1831764, 1831767
EPA 353.2 Rev. 2.0	09/15/2016			09/26/2016	Beverly Y. Sanders	1831764, 1831767
EPA 365.1 Rev. 2.0	09/15/2016	09/26/2016	Vijayalakshmi Reddy	09/27/2016	Lipi Saha	1831764, 1831767
EPA 365.1 Rev. 2.0 dissolved	09/15/2016			09/15/2016 16:15	Julia Storbeck	1831765, 1831768
SM 2320 B-97	09/15/2016			09/20/2016	Dale L. Simmons	1831763, 1831766
SM 2540 D-97	09/15/2016			09/20/2016	Sima Feizi	1831763, 1831766
SM 4500 F-C-97	09/15/2016			09/21/2016	Dale L. Simmons	1831763, 1831766
SM 5310 B-00	09/15/2016			09/22/2016	Julie Michelle Frank	1831764, 1831767